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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,342	04/27/2000	S. CRAIG BALL	BALL1-2-3	4451

7590

03/03/2003

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EXAMINER

HOFFMANN, JOHN M

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 03/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/530,342

Applicant(s)

BALL ET AL.

Examiner

John Hoffmann

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-8 and 10-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohga EP464613 in view of Tsuchiya.

Ohga discloses the invention at col. 5, line 19 and figure 1. However, Ohga does not disclose the purity of the material nor the stacked segments. It would have been obvious to use silicon carbide that is as pure as technologically possible. It is well known that impurities in anything are generally not desirable.

As to the "separate stacked generally tubular axial segments," Tsuchiya discloses that when one wants a SiC-coated high purity carbon muffle tube one must join a plurality of tubes because tubes longer than about 900mm (i.e. 35 inches) are not available. This is substantially the same reason that applicant uses segments (page 6 of the specification); that is: it is difficult to obtain tubes longer than 40 inches.

It would have been obvious to make the Ohga preform as large as reasonably possible, so as to make as much fiber as possible. It would have been further obvious

to stack muffle tubes together to accommodate the large preform, as disclosed by Tsuchiya because one cannot obtain larger single-piece muffle tubes.

As to claims 10-11, it would have been obvious to have a low of loss as possible, because a high loss means loosing signal integrity and good integrity makes for happier customers.

Claims 12-13: Ohga fails to teach how thick the coating should be. IT would have been an obvious matter of routine experimentation to determine the optimal thickness of the coating. Alternately, it would have been obvious to make the coating as thin as possible (yet functional) because thinner coatings take less time and materials to create.

Claim 14: as indicated above, it would have been obvious to use as silicon carbide that is as pure as possible.

Claims 7-8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohga and Tsuchiya as applied to claim 6 above, and further in view of Fatzer, 392557.

Fatzer discloses that coating carbon bodies usually has poor adherence (col.2, lines 8-17.) Fatzer discloses a method of coating with SiC with good adherence (col. 4, lines 7-27). It would have been obvious to use the Fatzer method of creating the Ohga coated muffle - for the improved coating characteristics the Fatzer method has.

The cited passage of Fatzer requires the heating of the furnace (i.e. the muffle tube part of the furnace) to temperatures within the claimed range. Thus the limitations of claims 7-8 are met during the claimed "providing" step. It is noted that the claim does not require that all of the furnace be heated to 1900C or that the temperature be maintained during the entire process.

Claim 12: Fatzer's method creates a layer 5 mils thick (col 6, lines 60-63). It would have been obvious to make the layer only 5 mils thick, because it would just take more time and effort to make an even thicker coating.

### ***Response to Arguments***

Applicant's arguments, see Paper 14, filed 10 Feb 2003, with respect to the rejection(s) of claim(s) 6-8 and 10-14 under 35 USC 112 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ohga in view of Tsuchiya.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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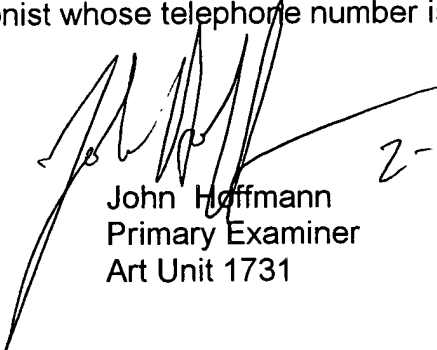
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is 703-308-0469. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7115 for regular communications and 703-305-3599 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



John Hoffmann  
Primary Examiner  
Art Unit 1731

2-27-03

jmh  
February 27, 2003